

### **AMENDMENTS TO THE CLAIMS**

The following listing of claims replaces all prior versions and listings of claims in the application.

#### **Listing of Claims:**

1. (Currently amended): Device for controlling the temperature of fluids circulating in a heat engine ~~(12)~~ vehicle, of the type comprising a circuit ~~(10)~~ in which a heat-transfer liquid circulates for cooling the heat engine ~~(12)~~ and at least one heat-transfer liquid / fluid to be regulated heat exchanger ~~(14, 16)~~, ~~characterized in that~~ which it is intended to control the temperature of first and second fluids formed by lubricating oil of the heat engine of the vehicle and by recirculated exhaust gases, respectively, ~~and in that it~~ wherein said device comprises:

- a first heat-transfer liquid / lubricating oil exchanger ~~(14)~~,
- a second heat-transfer liquid / recirculated exhaust gases exchanger ~~(16)~~,

the first and second exchangers ~~(14, 16)~~ being connected to a same heat-transfer liquid circuit ~~(10)~~.

2. (Currently amended): Device for controlling the temperature of fluids according to claim 1, wherein the heat-transfer liquid circuit ~~(10)~~ is connected to a heat source or to a heat sink ~~(18)~~.

3. (Currently amended): Device for controlling the temperature of fluids according to claim 2, wherein the heat source or the heat sink ~~(18)~~ comprises heat storage means ~~(18)~~ that can exchange heat with the heat-transfer liquid, in particular during a heating mode, in which the heat

from the storage means-(18) is transferred to the heat-transfer liquid, and during a regeneration mode, in which the heat from the heat-transfer liquid is transferred to the storage means-(18).

4. (Currently amended): Device for controlling the temperature of fluids according to claim 3, wherein the heat storage means-(18) comprise a chemical compound that stores or releases heat energy by changing phases.

5. (Currently amended): Device for controlling the temperature of fluids according to ~~any of claims 2 to 4~~claim 2, wherein the two exchangers-(14, 16) and the heat source or the heat sink (18) are connected in series in the heat-transfer liquid circuit-(10), in the order: heat source or heat sink, heat-transfer liquid / oil exchanger-(14), heat-transfer liquid / recirculated exhaust gases exchanger-(16), considering the direction of circulation of the heat-transfer liquid in the circuit (10).

6. (Currently amended): Device for controlling the temperature of fluids according to ~~any of claims 1 to 5~~claim 1, wherein the heat-transfer liquid circuit-(10) comprises derivation means (23) from the heat-transfer liquid / oil exchanger-(14).

7. (Currently amended): Device for controlling the temperature of fluids according to claim 6, wherein the derivation means-(23) from the heat-transfer liquid / oil exchanger-(14) comprise a derivation branch-(24) from the heat-transfer liquid / oil exchanger-(14) and a three-way valve-(26A) comprising first and second channels of the same signs connected, one to

the exchanger-(14), and the other, to the derivation branch-(24) from the heat-transfer liquid / oil exchanger-(14), and a third channel of the sign opposed to that of the former connected to the circuit-(10).

8. (Currently amended): Device for controlling the temperature of fluids according to claim 6, wherein the derivation means-(23) from the heat-transfer liquid / oil exchanger-(14) comprise a four-way valve-(26B) comprising two channels of opposed signs connected to the heat-transfer liquid / oil exchanger-(14) and two channels of opposed signs connected to the heat-transfer liquid circuit-(10).

9. (Currently amended): Device for controlling the temperature of fluids according to ~~any~~ claim 2, wherein the heat-transfer liquid circuit-(10) comprises derivation means-(27) from the heat source or from the heat sink-(18).

10. (Currently amended): Device for controlling the temperature of fluids according to claim 9, wherein the derivation means-(27) from the heat source or from the heat sink-(18) comprise a derivation branch-(28) from the heat source or from the heat sink-(18) and a three-way valve-(30A) comprising first and second channels of the same signs connected, one to the heat source or to the heat sink-(18), and the other, to the derivation branch-(28) from the heat source or from the heat sink-(18), and a third channel of the sign opposed to that of the former connected to the circuit-(10).

11. (Currently amended): Device for controlling the temperature of fluids according to claim 9, wherein the derivation means ~~(27)~~ from the heat source or from the heat sink ~~(18)~~ comprise a four-way valve ~~(30B)~~ comprising two channels of opposed signs connected to the heat source or to the heat sink ~~(18)~~ and two channels of opposed signs connected to the heat-transfer liquid circuit ~~(10)~~.

12. (Currently amended): Device for controlling the temperature of fluids according to ~~any~~ ~~of claims 1 to 11~~ claim 1, wherein the heat-transfer liquid circuit ~~(10)~~ comprises derivation means ~~(31)~~ from the engine ~~(12)~~.

13. (Currently amended): Device for controlling the temperature of fluids according to claim 12, wherein the derivation means ~~(31)~~ from the engine ~~(12)~~ comprise a derivation branch ~~(32)~~ from this engine ~~(12)~~ and a three-way valve ~~(34A)~~ comprising first and second channels of the same signs connected, one to the engine ~~(12)~~, and the other, to the derivation branch ~~(32)~~ of this engine ~~(12)~~, and a third channel of the sign opposed to that of the former connected to the circuit ~~(10)~~.

14. (Currently amended): Device for controlling the temperature of fluids according to claim 12, wherein the derivation means from the engine ~~(12)~~ comprise a four-way valve ~~(34B)~~ comprising two channels of opposed signs connected to the engine ~~(12)~~ and two channels of opposed signs connected to the circuit ~~(10)~~.

15. (Currently amended): Device for controlling the temperature of fluids according to ~~any~~ ~~of the preceding claims~~ claim 1, wherein the heat-transfer liquid circuit ~~(10)~~ is connected additionally to heat exchange means ~~(20)~~ between the heat-transfer liquid and the air of a passenger compartment of the vehicle.

16. (Currently amended): Device for controlling the temperature of fluids according to ~~any~~ ~~of the preceding claims~~ claim 1, wherein the heat-transfer liquid circuit is connected additionally to an electric pump ~~(38)~~ capable of circulating the heat-transfer liquid in at least a portion of the circuit ~~(10)~~, in particular when the engine ~~(12)~~ is off.

17. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to ~~any of the preceding claims~~ claim 1, **characterized in that it** ~~which~~ comprises the following steps:

- raising the temperatures of the oil ~~(TH)~~ and of the heat-transfer liquid ~~(TL)~~ and determining whether the temperature of the oil ~~(TH)~~ is lower than a predetermined temperature ~~(T)~~ (first condition),
- if this first condition ~~(40)~~ is met, determining whether the temperature of the heat-transfer liquid ~~(TL)~~ is higher than the temperature of the oil ~~(TH)~~ (second condition),
  - If the second condition ~~(42)~~ is met, adjusting ~~(44)~~ the amounts of the heat-transfer liquid and of the oil circulating in the exchanger ~~(14)~~ so as to promote heating of the oil through heat exchange with the relatively hot heat-transfer liquid,

- If the second condition ~~(42)~~ is not met, adjusting the amounts of the heat-transfer liquid and of the oil circulating in the exchanger ~~(14)~~ so as to avoid or minimize the heat exchange between the oil and the relatively cold heat-transfer liquid,
- if the first condition ~~(40)~~ is not met, adjusting ~~(44)~~ the amounts of the heat-transfer liquid and of the oil circulating in the exchanger ~~(14)~~ so as to promote cooling of the oil.

18. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to claim 3, ~~characterized in that it~~ which comprises circulating the heat-transfer liquid both in the heat-transfer liquid / recirculated exhaust gases exchanger ~~(16)~~ and in the heat storage means ~~(18)~~, and this independently from the operation in heating mode or in regeneration mode of these storage means ~~(18)~~.

19. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to ~~claims 3 and 15 taken together,~~ claim 3, wherein the heat-transfer liquid circuit is connected additionally to heat exchange means between the heat-transfer liquid and the air of a passenger compartment of the vehicle, wherein said method comprises, the heat storage means ~~(18)~~ being in regeneration mode and the engine ~~(12)~~ being on, adjusting the amount of the heat-transfer liquid circulating in the heat storage means ~~(18)~~ so as to avoid or minimize the heat exchange between the heat storage means ~~(18)~~ in the regeneration mode and the heat-transfer liquid.

20. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to ~~claims 3 and 15 taken together, characterized in that it~~claim 3, wherein the heat-transfer liquid circuit is connected additionally to heat exchange means between the heat-transfer liquid and the air of a passenger compartment of the vehicle, wherein said method comprises, the heat storage means ~~(18)~~ being in heating mode and the engine ~~(12)~~ being off or operating at idle speed after a period at a higher speed:

- if at least one condition among a first category of condition(s) is met, adjusting the amount of heat-transfer liquid circulating in the heat storage means ~~(18)~~ so as to avoid or minimize the heat exchange between the heat storage means in the heating mode and the heat-transfer liquid,
- if at least one condition among a second category of condition(s) is met, adjusting the amount of heat-transfer liquid circulating in the heat storage means ~~(18)~~ so as to promote heating of the heat-transfer liquid through heat exchange with these storage means ~~(18)~~.

21. (Currently amended): Method for controlling the temperature of fluids according to claim 20, wherein the first category of condition(s) comprises a voluntary order to turn off the engine ~~(12)~~ by a user.

22. (Currently amended): Method for controlling the temperature of fluids according to claim 21, wherein the second category of condition(s) comprises an order to turn off the engine ~~(12)~~ by a computer of the vehicle, a triggering of emergency lights of the vehicle accompanying turn-off of the engine ~~(12)~~, a dysfunction of the vehicle necessitating turn-off of the engine ~~(12)~~,

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and an order to heat the air of the passenger compartment in anticipation of start-up of the engine  
(12).